

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (previously presented): The method of claim 6, including:

directing the gaseous effluent at a volume flow rate, a mass flow rate, and a temperature into the first stage of the trap chamber that causes more than half of the AlCl_3 in the gaseous effluent to condense on the first and second trapping media; and directing the gaseous effluent with any remaining AlCl_3 that was not condensed in the first stage into a second stage of the trap chamber, which comprises third trapping media with sufficient microsurface areas and microsurface density for the volume flow rate, mass flow rate, and temperature of the gaseous effluent to cause sufficient physical collisions of the AlCl_3 with the third trapping medium at ambient temperature to cool and condense the remaining AlCl_3 in the gaseous effluent on the second trapping media, and thereby leaving the gaseous effluent after the second stage substantially free of AlCl_3 .

Claim 2 (currently amended): The method of claim 1, comprising:

directing the gaseous effluent at a volume flow rate, a mass flow rate, and a temperature into a first stage of a trap chamber that causes more than 90-95% of the AlCl_3 in the gas flow to condense in the first trapping stage; and

directing the gaseous effluent with the remaining 5-10% AlCl_3 that was not condensed in the first trapping stage into a second trapping stage, wherein the third trapping media have sufficient microsurface areas and microsurface density for the volume flow rate, mass flow rate, and temperature of the gaseous effluent to cause the remaining 5 - 10% of the AlCl_3 in the gaseous effluent to condense on the third

trapping media, and thereby leaving the gaseous effluent after the second stage substantially free of AlCl_3 .

Claim 3 (previously presented): The method of claim 1, including flowing the gaseous effluent from the reaction chamber to the first stage of the trap chamber at a temperature above 70 °C.

Claim 4 (previously presented): The method of claim 1, including directing the gaseous effluent into the first stage of the trap chamber at a volume flow rate in a range of 100 - 200 sccm microsurface density of the third trapping media in a range of more than 2 in^2/in^3 to less than 15 in^2/in^3 .

Claim 5 (previously presented): The method of claim 4, wherein the first trapping medium has a microsurface density of 8 in^2/in^3 and the surface density of the third trapping media is 10 in^2/in^3 .

Claim 6 (currently amended): A method of trapping condensable AlCl_3 from a gaseous effluent of an aluminum etch reaction chamber, comprising:

directing the gaseous effluent via an inlet axially into a first stage of a trap chamber in which a first trapping medium is positioned radially outward from the inlet and around at least a portion of the chamber at an axial inlet-to-first medium distance from the inlet and in which a second trapping medium is positioned at an axial inlet-to-second medium distance from below the inlet and radially inward in relation to the first trapping medium so that the gaseous effluent can flow from the inlet to the first trapping medium without having to flow first through the second trapping medium and so that the gaseous effluent can flow from the inlet to the second trapping medium without having to flow through the first trapping medium, and, further wherein the axial inlet-to-second medium distance is greater than the radial inlet-to-first medium distance, but wherein the second trapping medium is still close enough to the inlet such that the gaseous effluent flowing through the chamber eventually develops a lower partial pressure of AlCl_3 in the effluent gas adjacent the second trapping medium as compared to increasing partial pressure of AlCl_3 in the

effluent gas adjacent increasing build-up of condensed, solid AlCl_3 on the first trapping medium, ~~due to lesser heat transfer efficiency of solid AlCl_3 as compared to the second medium, which~~ draws AlCl_3 in the effluent gas preferentially toward the second trapping medium before the solid AlCl_3 build-up on the first trapping medium occludes the inlet.

Claim 7 (cancelled)

Claim 8 (previously presented): A method of removing condensable aluminum chloride vapor in an effluent produced by an aluminum etching system, said method comprising:

flowing said effluent through a disposable element to cool, condense, and solidify said condensable aluminum chloride vapor is cooled, condensed, and solidified as condensed aluminum chloride solid on said disposable element, wherein said disposable element comprises:

an outer screen column;

an inner screen column contained within said outer screen column and in spaced relation to said outer screen column such that a space is defined between said outer screen column and said inner screen column, and wherein an inner core is defined by said inner screen column;

a first trapping medium enclosing said outer screen column;

a second trapping medium disposed within said inner screen column;

and

a third trapping medium disposed within said space defined by said outer screen column and said inner screen column.

Claim 9 (cancelled):

Claim 10 (original): The method of claim 8, wherein said disposable member is removably contained in a housing, wherein said housing encloses a chamber, said housing having an inlet opening adapted to receive said effluent into said chamber and an outlet opening.

Claim 11 (previously presented): The method of claim 8, wherein said trapping media comprise mesh.

Claim 12 (original): The method of claim 11, wherein said mesh is metal wire.

Claim 13 (original): The method of claim 12, wherein said metal wire is intertwined or interlaced to form a metal fabric and said mesh comprises multiple layers of said metal fabric.

Claim 14 (original): The method of claim 12, wherein said metal wire is stainless steel.

Claim 15 (original): The method of claim 11, wherein said mesh has a surface density (Surface Area/Unit Volume) in a range of about 2 to 15 in²/in³.

Claim 16 (previously presented): The method of claim 10, wherein said housing has a length and wherein said second trapping medium has a length that is about one third to one half the length of said housing.

Claim 17 (previously presented): The method of claim 8, wherein said inner screen column comprises a wire screen.

Claim 18 (original): The method of claim 17, wherein said wire screen is a 4x4 to 8x8 mesh screen.

Claim 19 (previously presented): The method of claim 8, wherein said outer screen column is a solid metal sheet.

Claim 20 (original): The method of claim 10, wherein said housing further comprises a guide for centering and anchoring said disposable element in said housing.

Claim 21 (previously presented): The method of claim 8, wherein said inner screen column is positioned over said guide.

Claim 22 (original): The method of claim 8, wherein said disposable element is removable from said chamber and replaceable with another disposable element.

Claim 23 (previously presented): The method of claim 10, wherein said housing is an elongated cylinder.

Claim 24 (currently amended): A method of preventing build-up of solid aluminum chloride in a pump line that carries etching effluent comprising condensable aluminum chloride vapor molecules and chlorinated reaction gas molecules, said method comprising flowing said effluent through a disposable element, wherein said disposable element comprises trapping media for cooling, condensing, and solidifying said condensable aluminum chloride vapor molecules, wherein said trapping medium condenses and collects said condensable aluminum chloride vapor as condensed aluminum chloride solid, and wherein said disposable element comprises:

an outer screen column;

an inner screen column contained within said outer screen column and in spaced relation to said outer screen column such that a space is defined between said outer screen column and said inner screen column, and wherein an inner core is defined by said inner screen column;

a first trapping medium enclosing said outer screen column;

a second trapping medium disposed within said inner screen column; and

a third trapping medium disposed within said space defined by said outer screen column and said inner screen column.

Claim 25 (cancelled)

Claim 26 (original): The method of claim 24 wherein said disposable member is removably contained in a housing, wherein said housing encloses a chamber, said housing having an inlet opening adapted to receive said effluent into said chamber and an outlet opening.

Claim 27 (previously presented): The method of claim 24, wherein said trapping medium comprises a mesh.

Claim 28 (original): The method of claim 27, wherein said mesh is metal wire.

Claim 29 (original): The method of claim 28, wherein said metal wire is intertwined or interlaced to form a metal fabric and said mesh comprises multiple layers of said metal fabric.

Claim 30 (original): The method of claim 28, wherein said metal wire is stainless steel.

Claim 31 (original): The method of claim 27, wherein said mesh has a surface density (Surface Area/Unit Volume) in a range of about 2 to 15 in²/in³.

Claim 32 (previously presented): The method of claim 26, wherein said housing has a length and wherein said second trapping medium has a length that is about one third to one half the length of said housing.

Claim 33 (previously presented): The method of claim 24, wherein said inner screen column comprises a wire screen.

Claim 34 (original): The method of claim 33, wherein said wire screen is a 4x4 to 8x8 mesh screen.

Claim 35 (previously presented): The method of claim 24, including an outer shield surrounding said first trapping medium.

Claim 36 (original): The method of claim 26, wherein said housing further comprises a guide for centering and anchoring said disposable element in said housing.

Claim 37 (original): The method of claim 26, wherein said inner screen column is positioned over said guide.

Claim 38 (original): The method of claim 26, wherein said disposable element is removable from said chamber and replaceable with another disposable element.

Claim 39 (original): The method of claim 26, wherein said housing is an elongated cylinder.